

ABSTRACT OF THE DISCLOSURE

A semiconductor device comprises a first electrode 32, a ferroelectric film 36 formed above the first electrode, and a second electrode 40 formed above the ferroelectric film, which further comprises intermediate layers 34, 38 formed at least one of boundary between the first electrode and the ferroelectric film, and boundary between the ferroelectric film and the second electrode and having perovskite crystal structure. The intermediate layers having perovskite crystal structure are formed between the first electrode and the ferroelectric film and between the ferroelectric film and the second electrode, whereby even in a case that base metal is used as a material of the bottom electrode and the top electrode of a ferroelectric capacitor, the ferroelectric film can have crystal structure exhibiting ferroelectricity. Base metal can be used as a material of the bottom electrode and the top electrode of the ferroelectric capacitor, which decreases costs of semiconductor devices. Materials which have been difficult to use as materials of the bottom electrode and the top electrode of a ferroelectric capacitor can be used, whereby fabrication processes can be simplified, and electric characteristics can be improved.

20140414-96202960